

# 4

## **IA 4 – Earthquake/ Seismic Activity**

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**IA 4. Earthquake/Seismic Activity**

<b>IA 4 Tasked Agencies</b>	
<b>Primary Agencies</b>	Public Works
<b>Supporting Agencies</b>	Fire Department Police Department Emergency Management Administration

## **1 Description**

The City of McMinnville lies within the geographical area of the Willamette Valley. Geological research has shown that this region has probably been shaken by numerous subduction zone earthquakes during the last several thousand years. A subduction zone earthquake in this area occurs, on average, every 500–600 years, when the Juan de Fuca plate off the coast slides beneath the North American plate. Recent studies indicate that the Pacific Northwest could also be subject to great earthquakes (8.0+ on the Richter scale) as a result of the proximity to this subduction zone. In addition, fault zones existing in the Mount Angel and Portland areas may produce localized earthquakes of up to 6.0 on the Richter scale and lasting up to 60 seconds. A 5.7 magnitude earthquake centered in the Scotts Mills area occurred on March 25, 1993. See Appendix 1.

In addition to structural damage to bridges, buildings, utilities, and communication systems, an earthquake of 6–8 on the Richter scale may be expected to result in:

- Additional natural/environmental emergencies such as floods and landslides;
- Industrial and technological emergencies such as fires, explosions, and hazardous materials incidents;
- Disruption of vital services such as water, sewer, power, gas, transportation, and communication;
- Damage to, and disruption of, emergency response facilities, resources, and systems; and
- Civil disorders, such as looting.

Many of these occurrences could result in mass casualties due to the older building standards used in most structures in the area. Beginning July 1, 1992, new buildings are constructed to higher building standard.

## **2 Response Planning**

Earthquake planning in all phases is the primary responsibility of the Public Works Department. This includes coordinating the bi-annual review of this plan with the Emergency Management Coordinator. This plan will be activated after the occurrence of an earthquake where damage is evident. In the event of plan

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activation, Command may be assumed by the City Manager or the Community Development Director. All other departments will be expected to maintain their own services to the best of their ability and to assist Public Works as requested.

**2.1 Continuity of Government**

A worst-case earthquake scenario assumes that a quake would happen at night when key staff is at home, that major arterials would be damaged, and that all communications systems except car to car and portable radios would be inoperative for the first few hours following the shock. Since normal paging and call-back systems may be inoperative, response personnel (Public Works, Fire Department, and Police Department employees) should report to work. Members of the Emergency Management Organization, as well as others with Incident Command System (ICS) positions, should automatically respond to the Emergency Operations Center (EOC). In both cases, this should be done as soon as possible after ensuring the safety of their families. EOC staffing should take place under the assumption that those personnel who must commute into McMinnville may encounter severe obstructions and delays. As a result, Command may be passed among ranking response personnel until the City Manager or Community Development Director are able to assume Command.

Unified Command may be established among affected jurisdictions in order to ensure more efficient management of scarce resources. In this event, the Command and General Staff may co-locate with other jurisdictions in the best surviving EOC facility. On-scene control will be delegated to Operations Section personnel.

After ensuring that their own families have been cared for, all City of McMinnville employees shall report to their department headquarters for deployment on disaster operations.

**2.2 Damage Assessment and Incident Stabilization**

Damage assessment will take place in two phases: 1) the initial assessment, to determine general impact and damage to vital facilities and resources and provide a brief overview of impact on citizens and businesses; and 2) subsequent, in-depth assessments to determine the full extent of damage and the financial implications for disaster declaration and disaster assistance. Priorities in the initial assessment will be (1) life safety, (2) the restoration of direction and control capabilities, and (3) the restoration of vital services. The initial assessment will take place under the direction of the Planning Section. Priorities in the second phase, under the direction of the Finance Section, will include damage estimates, restoration of non-critical public services, and facilitation of the reception of disaster assistance. The City of McMinnville does not have resources to restore private residences or businesses. (See FA 4 – Recovery Strategy and Appendix 1 – Incident Stabilization/Restoration Sequence.)

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Upon request by the Incident Commander (IC), an aerial survey of the City may be performed as soon as possible after the initial shock. The results of this survey will facilitate further damage assessment on the ground. Through the Planning Section function, the City Building Department and/or the Yamhill County Building Department will direct initial damage assessment of facilities that house or affect the delivery of vital services as identified and prioritized in Section 6 of this Emergency Operations Plan. An assessment of damage to utilities, and evaluation of immediate needs of the population, especially water and sanitation services, should be accomplished as soon as possible. Potable water is a major concern following an earthquake. Power and gas for heating may also be extremely important depending upon the season. "Windshield" surveys should be conducted to provide an estimate of numbers of private homes and businesses affected.

**2.2.2 Secondary Damage Assessment**

The Finance Section should begin gathering dollar figures associated with the damage to support requests for disaster declarations and assistance. The Federal Emergency Management Agency's (FEMA's) method should be used for calculating loss estimates.

**3 Communication****3.1 Earthquake Information**

Although medium- and large-scale earthquakes will be obvious to those who experience them, follow-up confirmation will likely be received through the Law Enforcement Data System (LEDS), the media, and the County Office of Emergency Management. The City will be inundated with information on damage and life/safety concerns, and the communication plan must address facilitating and verifying those reports and requests.

**3.2 Public Information**

Providing instructions to the public is the responsibility of the PIO. Such instructions may include guidelines for returning to homes, shelter accommodations, sanitation, and where and how to report damages. The normal alert and warning methods utilizing the telephone, the media, and the Emergency Alert System (EAS) may be limited following a major earthquake. It may be necessary to augment these systems with mobile public address systems, door-to-door contact, and posting notices on bulletin boards in public gathering places.

**4 Emergency Service Actions**

A severe earthquake can create the need for long periods of repair and restoration, and may necessitate the commitment of personnel, equipment, materials, and supplies for long periods after the quake itself. Since earthquakes occur without

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warning, in addition to activities and responsibilities listed in the Basic Plan, responders should heed the following checklists of tasks that may need to be performed in response to, and recovery from, an earthquake. The task lists should not be considered all-inclusive; some emergencies will require that all tasks be accomplished, while others will not, and, still others will require tasks which are not listed. The checklists are divided according to City department and incident command function. All ICS support functions accrue to the Public Works Department unless staffed by Incident Command.

**4.1 Public Works****4.1.1 Impact**

- \_\_\_1. Assume Incident Command.
- \_\_\_2. Consider activation of the EOC.
- \_\_\_3. Assess damage to department resources and communication systems.
- \_\_\_4. Assess the earthquake situation with respect to aftershock forecasts, damage to vital response resources and emergency communications capabilities, utilities and other property, casualties, requirements for rescue or evacuation, etc. Keep the City Manager advised.
- \_\_\_5. Respond to and control the incident according to Department standard operating procedures (SOPs).
- \_\_\_6. Assist the Police Department in limiting travel into the affected area, as required. Cordon hazardous areas, and re-route traffic as required.
- \_\_\_7. Coordinate inspections of electric, gas, and water systems with appropriate utilities and agencies.
- \_\_\_8. Organize, deploy, and supervise secondary damage assessment teams. Condemn structures judged unsafe and document action.
- \_\_\_9. EOC activation: Brief staff on current conditions, capabilities and activities. Pass overall incident command to the City Manager, if requested.
- \_\_\_10. EOC activation: Provide the Planning Section with a list of resources deployed in response to the incident.
- \_\_\_11. EOC activation: Provide the Logistics Section with a list of outstanding or en route requests for additional supplies, resources, etc.

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- \_\_\_12. EOC activation: Maintain expenditure and time records for the Finance Section.

**4.1.2 Recovery**

- \_\_\_1. Release excess personnel and equipment according to the demobilization plan.
- \_\_\_2. Assist in compiling a damage assessment of City-owned structures, utilities, roads, and bridges to support requests for Federal disaster assistance.
- \_\_\_3. Assign personnel to monitor and direct the long-term recovery process.

**4.2 Fire Department****4.2.1 Impact**

- \_\_\_1. Provide assistance to the Public Works Director and Safety Officer through the life safety phase of the incident.
- \_\_\_2. Establish communications with field units.
- \_\_\_3. Assess damage to department resources. Obtain a damage report on water supply lines from Public Works.
- \_\_\_4. Participate in aerial damage assessment if air support is available. Determine the extent of fire and hazardous materials involvement.
- \_\_\_5. Direct structural search and rescue according to department SOPs.
- \_\_\_6. Maintain communications with operating units and fire personnel.
- \_\_\_7. Assess staffing needs and make adjustments as needed.
- \_\_\_8. Determine alternate sources of water for fire suppression if the City system has been damaged.
- \_\_\_9. Keep up to date information on conditions. Utilize appropriate access routes as conditions change.
- \_\_\_10. Coordinate patrols in evacuated areas with police and cooperating agencies for protection of property and prevention of fire. Such patrols have a lower priority than search and rescue.
- \_\_\_11. EOC activation: Provide the Logistics Section with a list of outstanding or en route requests for additional supplies.
- \_\_\_12. EOC activation: Provide the Planning Section with a list of resources committed to the incident and available to be assigned.

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- \_\_\_1. Assist in inspections and damage assessment as requested.

**4.3 Police Department****4.3.1 Impact**

- \_\_\_1. Assess damage to department resources and communications systems.
- \_\_\_2. Assess staffing needs. Consider activation of volunteer resources and mutual aid agreements.
- \_\_\_3. Coordinate with Fire and Public Works to develop evacuation and emergency access routes to the affected areas.
- \_\_\_4. Assist with search and rescue activities.
- \_\_\_5. Keep information on conditions up to date. Utilize appropriate routes as conditions change.
- \_\_\_6. Maintain communication with field units.
- \_\_\_7. Limit travel into the affected area as required. Cordon off hazardous areas as necessary. Reroute traffic on an area basis as required.
- \_\_\_8. Maintain perimeters and patrol evacuated areas as necessary.
- \_\_\_9. Assist other responders as requested.
- \_\_\_10. EOC Activation: Maintain time and expenditure reports for the Finance Section.
- \_\_\_11. EOC Activation: Provide the Planning Section with list of resources committed to the incident and available for assignment.
- \_\_\_12. EOC activation: Provide the Logistics Section with list of outstanding or en route request for additional supplies, resources, etc.

**4.4 Emergency Management****4.4.1 Impact**

- \_\_\_1. Assess the impact of emergency response communications capability. Assist in developing and implementing alternative communications systems as necessary.
- \_\_\_2. Consider activation of the EOC.
- \_\_\_3. Consider activation of volunteer organizations.



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- \_\_\_4. Keep information on conditions up to date.
- \_\_\_5. Establish and maintain reporting and coordination contact with cooperating jurisdictions and State and volunteer agencies until the Liaison function is filled.
- \_\_\_6. Assist Command and Command Staff as requested.
- \_\_\_7. Establish communications with the County Emergency Management Organizations.
- \_\_\_8. Brief the Command Organization on current conditions, capabilities, and activities in McMinnville and the affected area, including the need for declaration of emergency.

**4.4.2 Recovery**

- \_\_\_1. Assist in assessment of damages.
- \_\_\_2. Provide a coordination point for disaster recovery activities and agencies.
- \_\_\_3. Facilitate post-incident analysis.
- \_\_\_4. Revise and update the Emergency Plan as incident analysis indicates.

**4.5 Administration****4.5.1 Impact**

- \_\_\_1. Assess staffing. Unless specific instructions are given to the contrary, all City personnel are expected to report for work according to normal schedules.
- \_\_\_2. Consider activation of the EOC.
- \_\_\_3. City Manager: Consider assuming overall Incident Command.
- \_\_\_4. City Manager: Consider the need for Disaster Declaration and begin the process, if necessary.
- \_\_\_5. City Manager: Establish and maintain periodic communication with the City Council.

**4.5.2 Recovery**

- \_\_\_1. Oversee preparation of requests for Federal disaster assistance if necessary.

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- \_\_\_1. Establish a Unified Command structure with other affected jurisdictions as appropriate.
- \_\_\_2. Provide liaison with cooperating or assisting agencies and jurisdictions not part of the unified command structure.
- \_\_\_3. Establish sign-up points for citizens wishing to assist.
- \_\_\_4. Establish and maintain contact with the media, provide public and protective action information, and alert and warning as appropriate.
- \_\_\_5. Monitor the overall safety of incident operations.
- \_\_\_6. Participate in aerial surveys to determine the extent of overall danger and damage to life and property.
- \_\_\_7. If earthquake conditions hamper or overload response capabilities, determine priorities and cost restrictions on the basis of criteria outlined in Section 1. In addition, consider the number of lives that may be saved, accessibility to the scene, and the amount of time needed to accomplish the mission.
- \_\_\_8. Establish a system for citizens to report damages.
- \_\_\_9. If conditions warrant, declare the existence of a local emergency and submit a request for formal declaration to the County for further assistance.
- \_\_\_10. Consider the need for a written Incident Action Plan (IAP).

For more detailed instructions for the Command Staff see the Basic Plan.

**4.7 Planning Section**

- \_\_\_1. Coordinate and participate in aerial surveys if air support is available.
- \_\_\_2. Assess the earthquake situation with respect to areas affected; damage to response and communications systems, utilities, and other property; casualties; requirements for rescue or evacuation, etc. Keep Command and other Sections advised. Establish a schedule for requesting updated weather and aftershock information.
- \_\_\_3. Provide a contact point for citizen requests for assistance. (This duty may be shared with the PIO.)

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- \_\_\_4. Develop and keep up-to-date information on conditions, routes, damage, and status of relief efforts.
- \_\_\_5. Facilitate planning sessions.
- \_\_\_6. Establish and maintain reporting and coordination contact with cooperating jurisdictions and State agencies.
- \_\_\_7. Gather lists and display resources committed to the incident, and those available for assignment.
- \_\_\_8. Evaluate the overall community situation. Augment weather reports with other reports to maintain a continuing assessment of the situation.
- \_\_\_9. Develop and reproduce a written IAP if directed to do so by Command.
- \_\_\_10. Perform an initial damage assessment.
- \_\_\_11. Maintain a log of major decisions and actions.
- \_\_\_12. Organize, deploy, and supervise secondary damage assessment teams. Condemn structures judged unsafe and document action

For more detailed instructions for the Planning Section in the Basic Plan.

**4.8 Logistics Section**

- \_\_\_1. Establish and maintain coordination with cooperating jurisdictions. Determine the procedure for requesting additional resources.
- \_\_\_2. Attend planning sessions. Record resource needs expressed and provide updates on resource availability.
- \_\_\_3. Receive and process requests for outside assistance.
- \_\_\_4. Determine the needs of the American Red Cross and other human services for transportation, communications, etc. Assist as possible.
- \_\_\_5. Assess the adequacy of communications systems. Consider requesting County assistance in activating Amateur Radio Emergency Services operators or providing additional resources.
- \_\_\_6. Assess the adequacy of transportation resources. Consider requesting County assistance in activation of 4-wheel drive clubs and/or the National Guard.
- \_\_\_7. Assess the adequacy of incident facilities. Consider the need for facilities for medical assessment, a Disaster Application Center, temporary morgues, etc.

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- \_\_\_8. Assess general resource needs of the incident. Resources that may be required in response to a major earthquake include search dog teams, potable water, heavy rescue teams, Urban Search and Rescue teams, field hospitals, heavy equipment, generators, lighting equipment, etc.
- \_\_\_9. Attend planning meetings.

For more detailed instructions for the Logistics Section, see the Basic Plan.

**4.9 Operations Section**

- \_\_\_1. Assess earthquake situation, scope, and impact.
- \_\_\_2. Attend planning sessions. Define tactics to meet overall strategy goals and share the effectiveness of tactics used in prior periods.
- \_\_\_3. Deploy resources to meet the defined strategy goals. Perform search and rescue, clear roads, repair facilities, etc. according to priorities, as identified in this plan and those defined at the time of the incident. Priority operations include:
  - a. Search and Rescue (under direction of the McMinnville Fire Department [MFD])
  - b. Restoration or relocation of vital City resources.
  - c. Removal of debris from arterial streets first, then collector streets.
  - d. Assess the integrity of sewer, water, and gas lines. Provide portable sanitation facilities and potable water to stricken neighborhoods.
  - e. Coordinate with franchised garbage collectors to limit accumulation of food-related garbage as the first priority, followed by general debris removal and trash collection.
  - f. Establish temporary morgues, as necessary.
  - h. Coordinate with County Public Health officials to provide health and sanitation inspections of the area.
  - I. Coordinate with Yamhill County inspections of bridges.

For more detailed instructions for the Operations Section, see the Basic Plan.

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- \_\_\_1. If conditions warrant, gather supporting documentation for Declaration of Emergency. Provide information to Command Staff and the Planning Section.
- \_\_\_2. Assess financial tracking needs of the incident. Provide staff and procedures to ensure that adequate financial records are kept.
- \_\_\_3. Obtain detailed data on property damage and local financial resources expended in support of the incident.
- \_\_\_4. Oversee preparation of necessary damage and funding reports.
- \_\_\_5. Assist Logistics in determining sources of additional resources. Process procurement paperwork as necessary.
- \_\_\_6. Attend Planning Session. Provide updates on incident costs incurred and projected.

**5 Appendices**

- Appendix 1 - Incident Stabilization/Restoration Sequence

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**Appendix 1 - Incident Stabilization/Restoration Sequence**

	<b>PRIORITY 1</b>	<b>PRIORITY 2</b>	<b>PRIORITY 3</b>
Facilities	EOC Police/Fire Stations Red Cross Shelters Dispatch Center	Schools Water Shop City Hall Group Homes	Grocery stores Other City facilities
Energy	Power to Fuel Pumps Power to EOC Power to City Computers Power to Water Pump and Sewer Lift Stations Power to Shelters Critical Wastewater facilities	Heating Cooking	
Communication	EAS Radio Station Emergency Response EOC	Phones on essential circuits non-EAS stations	Data and other commercial communications services
Transportation	Primary Arterials Ambulances Evacuation assistance	YCTA Transit; Collector streets	Freight service; Private autos
Personnel	City Manager Response Personnel EOC Staff Mayor	Workers essential to reconstruction, debris and waste disposal	Personnel necessary for economic recovery
Water	Potable Water Fire Suppression	Industrial Processes Sanitation	Irrigation

The priorities reflected in this diagram are general guidelines for returning the city to operational and economic normalcy.

Later priorities include: banking facilities, insurance firms, food, pharmaceuticals, etc.

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